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UNITED STATES AIR FORCE

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OCCUPATIONAL SURVEY REPORT



AIRBORNE RADAR SYSTEMS SPECIALIST

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AFSC 118X2

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OCCUPATIONAL ANALYSIS PROGRAM
USAF OCCUPATIONAL MEASUREMENT CENTER
AIR TRAINING COMMAND
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TABLE OF CONTENTS

	<u>PAGE NUMBER</u>
PREFACE	iii
SUMMARY OF RESULTS	iv
INTRODUCTION	1
SURVEY METHODOLOGY	2
Survey Administration	2
Survey Sample	3
Task Factor Administration	3
SPECIALTY JOBS	6
Structure Overview	7
Job Descriptions	11
Comparison of Specialty Jobs.	12
Comparison of Current Survey to Previous Survey	12
ANALYSIS OF DAFSC GROUPS	13
Skill Level Descriptions	16
Summary	16
ANALYSIS OF AFR 39-1 SPECIALTY DESCRIPTIONS	16
TRAINING ANALYSIS	20
First-Enlistment Personnel	20
Training Emphasis and Task Difficulty Data.	23
Specialty Training Standard (STS)	28
Plans of Instruction (POI)	32
JOB SATISFACTION ANALYSIS	33
IMPLICATIONS	39
APPENDIX A	40

PREFACE

This report presents the results of an Air Force occupational survey of the Airborne Radar Systems (AFSC 118X2) career ladder. Authority for conducting occupational surveys is contained in AFR 35-2. Computer products used in this report are available for use by operations and training officials.

Mr Don Cochran developed the survey instrument; Mr Wayne Fruge provided computer programming support, and Ms Tamme Lambert provided administrative support. Lieutenant Ron W. Schrupp analyzed the data and wrote the final report. This report has been reviewed and approved for release by Lieutenant Colonel Charles D. Gorman, Chief, Airman Analysis Branch, Occupational Analysis Division, USAF Occupational Measurement Center.

Copies of this report are distributed to Air Staff sections, major commands, and other interested training and management personnel. Additional copies may be requested from the Occupational Measurement Center, Attention: Chief, Occupational Analysis Division (OMY), Randolph AFB Texas 78150-5000.

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SUMMARY OF RESULTS

1. Survey Coverage: Survey results are based on responses from 98 Airborne Radar Systems personnel. This represents 66 percent of the total assigned AFSC 118X2 population. Incumbents were surveyed across Tactical Air Command (TAC) including personnel from the 3-, 5-, and 7-skill level DAFSCs.
2. Career Ladder Structure: One cluster containing three different jobs was identified in the career ladder structure analysis. Each job involves mostly technical activities including equipment operation and maintenance, aircrew duties, and preflight/postflight tasks. The largest job in the cluster contains a primarily technical group. The other two jobs involve flying training instruction and standardization/evaluation tasks.
3. Career Ladder Progression: The AFSC 118X2 career ladder progression pattern from the 3- and 5-skill level to the 7-skill level is limited by the highly technical, operational nature of the jobs performed. Even at the 7-skill level, the primary job involves operating and maintaining a variety of equipment aboard the E-3 aircraft. However, a portion of the 7-skill level job does involve supervision.
4. AFR 39-1 Specialty Descriptions: A comparison of survey data to AFR 39-1 indicates the AFR 39-1 Specialty Descriptions provide comprehensive depictions of the respective jobs. One change is recommended for both the 3-/5-skill and 7-skill level descriptions, to include activities which require coordination of the E-3 aircraft systems with crew members.
5. Training Analysis: A match of survey data to the AFSC 118X2 Specialty Training Standard (STS) identified several STS 3-skill level proficiency codes for changes. A similar match of data to the Plans of Instruction (POI) for Course E3AQR11832 000 (conducted at Keesler AFB MS) and Course E3000BQOQX (held at Tinker AFB OK), provides adequate support for all matched objectives. There were many tasks not matched to the STS and POIs which reflect training areas that may deserve inclusion in future revisions of these three documents.
6. Job Satisfaction: In general, the survey respondents reflected high job satisfaction. Across different experience groups, there is a trend toward slightly lower satisfaction with increasing job experience. Compared to other aircrew ladders surveyed in 1988, the 118X2 experience groups had somewhat lower job satisfaction. A comparison of data with the former 328X2 (Airborne Warning and Control Radar) occupational survey done in 1984 revealed slightly lower satisfaction for the 118X2 Time in Career Field (TICF) groups. Indicators for the specialty jobs reflected high satisfaction overall. Low reenlistment indicators for the first-enlistment airmen may warrant investigation.

OCCUPATIONAL SURVEY REPORT
AIRBORNE RADAR SYSTEMS CAREER LADDER
(AFSC 118X2)

INTRODUCTION

This report presents the results of an occupational survey of the Airborne Radar Systems Specialty completed by the Occupational Analysis Division, USAF Occupational Measurement Center, in June 1989. This survey was requested by HQ TAC/DOY at Langley AFB VA, for evaluating the current AFSC 118X2 training program since this specialty was separated from AFSC A328X2 (now AFSC 445X4) and designated the 118X2 specialty (effective 31 October 1984).

Background

Prior to their October 1984 conversion, 118X2 personnel held AFSC A328X2. The "A" prefix denoted "aircrew duty," as these members primarily performed tasks involving in-flight operations and maintenance. The conversion from AFSC A328X2 to 118X2 allowed these members to be placed under the 11XXX Air Operations career field. There are no in-shop, ground-maintenance tasks performed by these aircrew members. Such tasks are now performed by the AFSC 445X4 career ladder personnel.

The primary mission of this specialty is to operate, monitor, test, maintain, and visually inspect surveillance radar, Identification Friend or Foe (IFF) interrogator, and ancillary equipment onboard the E-3 Airborne Warning and Control System (AWACS) aircraft. The AFR 39-1 Specialty Descriptions for this career ladder further specify that these members troubleshoot, isolate, and repair malfunctions using diagnostic software routines, checkout procedures, and fault isolation tests. They also replace defective components of primary systems, and perform staff functions required of aircrew members. For members entering the 118X2 career ladder, a minimum score of 67 is required on the Armed Services Vocational Aptitude Battery (ASVAB) test, in the electronics category.

Initial training for personnel entering this career ladder is provided by the Technical Training Center (TTC) at Keesler AFB MS. After basic training, the airmen attend a 14-day Enlisted Aircrew Undergraduate Course held at Sheppard AFB TX. Then they are sent to Keesler TTC to attend course E3ABR445X4 (Airborne Warning and Control Radar Maintenance Specialist). This "piggyback" course lasts 36 weeks, and teaches the 118X2 personnel basic principles on operating and maintaining various radar and identification systems, comparable to those systems found on the AWACS aircraft. Electronic principles are also taught as part of this course.

Upon graduation from the Keesler course, members are awarded a diploma. Then, they must complete Course E3000BQOQX (E-3 Airborne Radar Systems Operator) held at Tinker AFB OK. This 8-week course is specifically designed to

teach the airmen operation and maintenance procedures for the E-3 surveillance radar, IFF, and associated cooling systems, as they receive in-flight training on the AWACS aircraft. Graduates from this course are qualified to serve as operational aircrew members and they are awarded their 3-skill level. Those individuals eliminated for medical or flying deficiencies are usually reclassified into AFSC 445X4, to properly utilize the ground training they have already received through the E3ABR445X4 course at Keesler TTC. In the training portion of this report, the focus will be on providing information which may be used to evaluate the AFSC 118X2 Specialty Training Standard (STS) dated January 1987, and Plan of Instruction (POI) documents for both the Keesler and Tinker training courses.

SURVEY METHODOLOGY

Data for this survey were collected using USAF Job Inventory AFPT 90-118-841, dated May 1988. The Inventory Developer reviewed pertinent career ladder documents, the previous inventory and OSR to prepare a tentative task list. This task list was then validated through personal interviews with 28 subject-matter experts in several operational units at Tinker AFB. The units visited were:

552 AWACW

552 TTS (academic training)

963 AWACS

964 AWACS

965 AWACS

966 AWACTS (flying training)

The resulting Job Inventory listed 319 tasks grouped into 10 duty headings. There were also a number of background questions asking about duty AFSC (DAFSC), time in present job, time in service, job title, organization assigned to, and job satisfaction information.

Survey Administration

From July 1988 through December 1988, the inventory booklets were administered to personnel eligible to take the survey. First, the booklets were mailed directly to points of contact within the career ladder, located at the various training and operational units. Then, these individuals distributed a booklet to each eligible 118X2 member within their unit. All survey respondents were required to have a 3-, 5-, or 7-skill level DAFSC.

These respondents were selected from a computer-generated mailing list provided by the Air Force Human Resources Laboratory. Those individuals not eligible to participate in the survey included members in transition for a permanent change of station (PCS); those retiring at the time of survey; those hospitalized; and those who had not been in their present job for at least 6 weeks.

All individuals who filled out an inventory booklet first completed an identification and background information section. Next, they went through the booklet and checked each task performed in their current job. After checking all tasks performed, the respondents rated each of these tasks on a 9-point scale reflecting relative time spent on each task compared to all other tasks. Ratings ranged from 1 (indicating a very small amount of time spent) to 9 (indicating a very large amount of time spent). To determine relative time spent for each task checked by a respondent, the sum of a respondent's ratings was assumed to account for 100 percent of his or her time spent on the job. All respondents' ratings were added together and then each rating was divided by the sum of all responses. Then, this quotient was multiplied by 100 to obtain the relative time spent for each task. This procedure provided a basis for comparing tasks not only in terms of percent members performing, but also in terms of relative percent time spent on tasks and groups of tasks.

Survey Sample

Participants in the survey were carefully chosen to ensure that the final survey sample would be proportionally representative of the assigned major command (MAJCOM) and paygrade groups. Table 1 shows the percentage distribution by MAJCOM, of assigned personnel in the career ladder as of May 1988. Also shown in this table is the percentage distribution by MAJCOM in the final survey sample. Table 2 shows the survey sample representation across paygrades. As these tables indicate, survey representation by MAJCOM and paygrade was very good. The 98 respondents included in the final survey sample represent 66 percent of the total 148 DAFSC 118X2 personnel assigned.

Task Factor Administration

Once the survey data were processed and input into a Sperry 1100 computer, Comprehensive Occupational Data Analysis Programs (CODAP) were used to analyze the data and create job descriptions for various groupings of respondents. But job descriptions alone do not provide sufficient data for making decisions about career ladder documents or training programs. Training emphasis (TE) and task difficulty (TD) information are also useful for analysis of the career ladder. To obtain these needed task factor data, senior AFSC 118X2 personnel (mostly those in paygrades E-6 and E-7) were asked to complete either a TE booklet or TD booklet. Because there were a limited number of senior members to choose from, some members were asked to fill out both TE and TD booklets. All of these booklets were processed separately from the job inventories and the compiled TE and TD data are used in a number of different analyses discussed later in this report.

TABLE 1
COMMAND REPRESENTATION OF AFSC 118X2 SURVEY SAMPLE

<u>COMMAND</u>	<u>PERCENT OF ASSIGNED*</u>	<u>PERCENT OF SAMPLE</u>
TAC	90	91
AF ELEM EUR	10	9
TOTAL ASSIGNED*		148
TOTAL NUMBER ELIGIBLE		136
TOTAL IN SAMPLE		98
PERCENT OF ASSIGNED		66%
PERCENT OF ELIGIBLE		72%

* As of May 1988

Note: AFSC 118X2 personnel not eligible for survey include those members with discharge, retirement, PCS, or hospital status, and those having less than 6 weeks in their present job.

TABLE 2

PAYGRADE REPRESENTATION OF AFSC 118X2 SURVEY SAMPLE

<u>PAYGRADE</u>	<u>PERCENT OF ASSIGNED*</u>	<u>PERCENT OF SAMPLE</u>
E9	-	-
E8	1	-
E7	8	10
E6	17	16
E5	34	35
E4	25	28
E3	15	11
E2	-	-
E1	-	-

* As of May 1988

- Indicates less than 1 percent

Training Emphasis (TE). Training emphasis is a rating of those tasks which require structured training for first-enlistment personnel. Structured training can be provided by resident technical schools, field training detachments (FTD), mobile training teams (MTT), or in-house formal OJT. Training emphasis data were collected from 35 experienced 118X2 supervisors. These raters were asked to rate inventory tasks on a 10-point scale ranging from no training required (0) to extremely high training emphasis (9). The interrater reliability for these 35 raters was acceptable. The average TE rating was 3.54, and the standard deviation was 2.13. High TE ratings are determined by adding one standard deviation to the average TE rating. Thus, tasks receiving ratings of 5.67 (3.54 plus 2.13) or higher are considered to have relatively high TE.

When TE ratings are used with other information, such as TD ratings and percent members performing tasks, they can provide insight into training requirements and help validate the need for structured training for the career ladder.

Task Difficulty (TD). Task difficulty is defined as the length of time the average airman takes to learn how to perform a task. This survey had 24 experienced supervisors rate the difficulty of the tasks in the inventory on a 9-point scale ranging from 1 (extremely low difficulty) to 9 (extremely high difficulty). Ratings were adjusted so tasks of average difficulty would have a value of 5.0 and a standard deviation of 1.0. As with TE ratings, interrater reliability for the TD raters was acceptable. Tasks with ratings of 6.00 and higher are considered difficult for first-term airmen to learn how to perform, thus requiring more time for instruction.

SPECIALTY JOBS (Career Ladder Structure)

The structure of jobs within the Airborne Radar Systems career ladder was examined on the basis of similarity of tasks performed and the percent of time spent ratings provided by job incumbents, independent of background or other factors.

For the purpose of organizing individual jobs into similar units of work, an automated job clustering program compares the job description for each individual in the sample to every other job description in terms of the tasks performed and the relative amount of time spent doing those tasks. The automated program is designed to find the two most similar job descriptions and merge them into a group. All other job descriptions are then compared to this group and those that are similar are also merged. In successive stages, new members are added to merge with groups already formed or to create new groups, until all job incumbents (and their respective job descriptions) are merged. The result is a pattern of jobs making up the 118X2 career ladder.

For this report, the career ladder structure is described in terms of clusters and job types. The basic identifying group is the Job Type. A job type is a group of individuals who perform many of the same tasks and spend

similar amounts of time performing them. When different job types have a substantial degree of similarity between them, they are grouped together and labeled a Cluster.

Structure Overview

Based on the similarity of tasks performed and the amount of time spent performing each task, one cluster containing three job types was identified in the examination of the Airborne Radar Systems specialty. These three primary jobs, listed below, are illustrated in Figure 1 and descriptions for each are given on the following pages. The stage (ST) or group (GP) numbers printed beside each job title are the same numerical identifiers located on the CODAP-diagram. These identifiers are used during analysis of the groups to find specific information for each group. The letter N within parentheses refers to the number of personnel in the group.

- I. AIRBORNE RADAR SYSTEMS CLUSTER PERSONNEL (N=98)
 - A. Airborne Radar Technician (ART) Personnel (N=47)
 - B. ART Instructors (N=28)
 - C. ART Standardization/Evaluation Personnel (N=6)
 - D. Not Grouped but Found in Cluster (N=17)

The 118x2 members forming this cluster account for all of the personnel in the survey sample. Approximately 84 percent of the sample members grouped into one of the three identified job types. The other 16 percent performed many tasks also performed by members in these primary jobs, but some tasks they performed were not the same and so they could not be grouped specifically within one of the three jobs. However, there was enough similarity to group them within the cluster.

Two tables in this section provide background information about the cluster and specific job types listed. Table 3 displays selected background information such as DAFSC distributions across each group, predominant grades, average months in service (i.e. TAFMS), and average number of tasks performed. For example, Table 3 shows the Airborne Radar Systems Cluster has 98 members, mostly having 5- or 7-skill levels, predominantly in paygrades E4 and E5, and they perform 190 tasks on average. Table 4 indicates the relative amount of time spent across each of the 10 Duties for the identified job groups. The ART Instructors, for example, spend 10 percent of their job time performing training tasks (Duty D), and 27 percent of their job time involves in-flight crew duties (Duty I).

Also included in this report is an Appendix concerning the Airborne Radar Systems job tasks. Appendix A lists tasks commonly performed by members in each of the jobs identified. The most commonly performed tasks are selected according to high percent members performing and time spent data, though the

AFSC 118X2
SPECIALTY JOBS
(N=98)

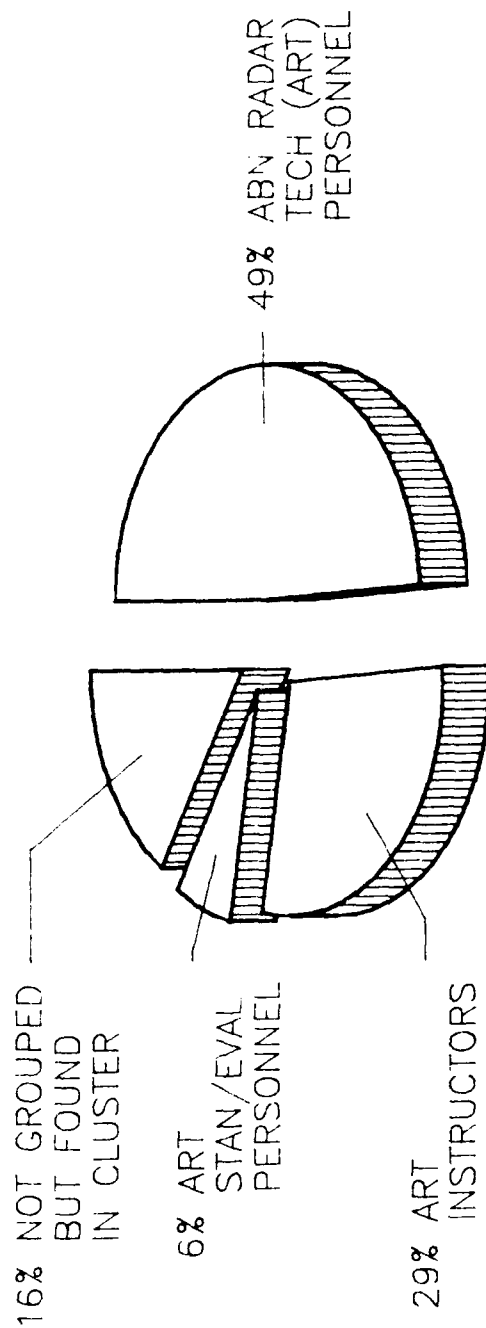


Figure 1

TABLE 3

SELECTED BACKGROUND DATA FOR 118X2 CAREER LADDER JOBS

	JOB TYPES			
	AIRBORNE RADAR SYSTEMS CLUSTER PERSONNEL	AIRBORNE RADAR TECHNICIAN (ART) PERSONNEL	ART INSTRUCTORS	ART STANDARDIZATION/ EVALUATION PERSONNEL
NUMBER IN GROUP	98	47	28	6
PERCENT OF TOTAL SAMPLE	100%	48%	29%	6%
PERCENT IN CONUS	79%	85%	75%	83%
AFSC DISTRIBUTION				
(PERCENT RESPONDING)				
11832	5%	13%	0%	0%
11852	45%	68%	36%	50%
11872	48%	19%	64%	50%
PREDOMINANT GRADES				
AVERAGE MONTHS IN CAREER LADDER	E4-E5	E4-E5	E5	E6
AVERAGE MONTHS IN SERVICE	70	50	84	111
PERCENT FIRST-ENLISTMENT	106	75	129	141
AVERAGE NUMBER OF TASKS PERFORMED	32%	51%	18%	0%
	190	173	219	232
PERCENT SUPERVISING	30%	15%	50%	50%

TABLE 4

AVERAGE PERCENT TIME SPENT ON DUTIES BY CAREER LADDER JOBS

	JOB TYPES			
	AIRBORNE RADAR SYSTEMS CLUSTER PERSONNEL	AIRBORNE RADAR TECHNICIAN (ART) PERSONNEL	ART INSTRUCTORS	ART STANDARDIZATION/ EVALUATION PERSONNEL
A. ORGANIZING AND PLANNING	2	1	3	6
B. DIRECTING AND IMPLEMENTING	2	1	3	7
C. INSPECTING AND EVALUATING	2	*	2	8
D. TRAINING	5	2	10	9
E. PERFORMING GENERAL ADMINISTRATIVE AND SUPPLY TASKS	4	3	5	10
F. PERFORMING PREFLIGHT AND POSTFLIGHT TASKS	19	22	17	11
G. MAINTAINING MISSION CREW COMPARTMENT EQUIPMENT	25	27	23	20
H. MAINTAINING INTERROGATION IDENTIFICATION FRIEND OR FOE (IFF) EQUIPMENT	6	6	6	4
I. PERFORMING IN-FLIGHT CREW DUTIES	29	33	27	20
J. PERFORMING MOBILITY TASKS	5	5	5	4

* Indicates less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding

time spent values have been omitted from the appendix. Complete job descriptions for this survey, which include time spent values, can be found in a copy of the Analysis Extract.

Job Descriptions

I. AIRBORNE RADAR SYSTEMS CLUSTER PERSONNEL (ST0001, N=98). All 98 members of the AFSC 118X2 survey sample were grouped within this one cluster, due to the high degree of similarity in task performance across the entire career ladder. About half (48 percent) of the cluster is comprised of 7-skill level technicians, most serving as Airborne Radar Technician (ART) Personnel (see Table 3). Only 5 percent of the cluster was 3-skill level personnel. Duties performed most of the time by these cluster members involve preflight and postflight tasks, equipment maintenance, and in-flight crew duties (as shown in Table 4). Twenty-one percent of the cluster members are stationed on overseas assignments. Tasks commonly performed by members in this cluster include:

- Monitor locations displayed on RCMP
- Complete and maintain Airborne Radar Technician (ART) in-flight log forms
- Monitor liquid cooling system (LCS) meters and gauges
- Perform radar turn-on procedures
- Perform preflight inspections of personal equipment
- Perform preflight inspections of LCS, power feeder duct cooling system (PFDCS), & antenna cooling control panels
- Perform IFF turn-on and turn-off procedures
- Analyze surveillance radar manual test results
- Perform manual fault analyses
- Visually inspect SF-6 systems

Personnel in this cluster average 106 months TAFMS, 32 percent are in their first-enlistment, and they perform an average of 190 tasks.

Within this Airborne Radar Systems Cluster, there are three job variations, differing essentially on the amount of time spent performing supervisory versus technical tasks. As would be expected, the Airborne Radar Technician (ART) Personnel (ST0020, N=47) make up the core operational, technical group in the cluster. These 47 members account for almost half of the survey sample (48 percent). They are mostly 5-skill level technicians operating, inspecting, testing, and maintaining the radar, IFF, and cooling systems on the AWACS aircraft. Although this group performs the same technical tasks performed by everyone else in the survey, the ART Personnel are distinguishable by the greater amount of time they spend doing those tasks. As reflected in Table 4, only 4 percent of the group's job time is spent performing supervisory functions (Duties A thru D). However, the group spends significantly more time on preflight and postflight tasks (22 percent) and crew duties (33 percent). Table 3 indicates only 15 percent of the group members serve in a supervisory capacity, 51 percent are in their first enlistment, and the group collectively performs 173 tasks on average.

In comparison, the two other jobs in this cluster involve more supervision, though they are still technical jobs. The ART Instructors (ST0031, N=28) spend more time (18 percent) performing supervisory functions such as training (Duty D), and somewhat less time in technical areas (see Table 3). This group of 28 members also performs more tasks on average (see Table 3) compared to the less experienced ART Personnel. It should be noted however, that the primary job performed by these instructors is very similar to the technical job performed by the ART Personnel group, involving the flying and maintaining equipment activities (Duties F thru J). Training tasks performed by these instructors include equipment procurement, trainee evaluation, and planning of training programs. The other supervisory job, and the last one of this survey, is the ART Standardization/Evaluation Personnel (ST0009, N=6). These 6 members evaluate aircraft equipment and training programs conducted by the instructors, to ensure overall mission effectiveness. They also spend a greater amount of time performing administrative duties, compared to the other specialty jobs. These senior supervisory personnel primarily perform the same technical tasks performed by the other cluster groups, though to a lesser degree. Approximately 30 percent of their job time is spent on supervisory activities (Duties A thru D), while the rest is mostly technical. These group members have the highest average TAFMS (141 months) within the cluster, and they perform 232 tasks on average, more than the other job groups. Three of the 6 members indicate they are supervisors as well.

Comparison of Specialty Jobs

One cluster composed of three job variations was identified in the AFSC 118X2 career ladder structure analysis. Each job involves mostly technical work, such as in-flight crew duties, maintenance of radar and IFF equipment, and performing preflight and postflight tasks. The jobs vary according to the amount of training, or supervisory work the individual performs in conjunction with the primary operational job. In the case of the ART Personnel group, only 4 percent of the job time is spent performing the supervisory activities (Duties A thru D, in Table 4). The ART Instructors spend 18 percent of their job time supervising (including 10 percent on training), and the ART Standardization/Evaluation Personnel perform supervisory functions 30 percent of the time, and administrative functions another 10 percent of the time.

Comparison of Current Survey to Previous Survey

Because this is the first occupational survey conducted on AFSC 118X2 since its separation from the 328X2 career ladder, comparisons of the specialty jobs between this survey and the previous 328X2 survey (dated November 1984) cannot be made directly. However, job descriptions identified in the 1984 survey (AFPT 90-328-498) describing the Airborne Radar Technician and AWACS Training Development Personnel jobs, do match the description of the Airborne Radar Technician (ART) Personnel group identified in this survey.

Comparison of these job descriptions reveals that the tasks performed by the ART personnel before their separation from AFSC 328X2 (now AFSC 445X4), are the same tasks performed by ART members today. A portion of the ART job also includes tasks involving fault isolation, monitoring, and programming of radar, IFF, and associated equipment. These tasks describe the AWACS Training Development Personnel job identified in the 1984 survey, and are now part of the ART Personnel job description. These data indicate the job performed by ART Personnel has grown to encompass a broader range of tasks.

ANALYSIS OF DAFSC GROUPS

An analysis of DAFSC groups, in conjunction with the analysis of the career ladder structure, is an important part of each occupational survey. DAFSC analysis identifies similarities and differences in task and duty performance at the various skill levels. This information may then be used to evaluate how well career ladder documents, such as AFR 39-1 Specialty Descriptions and the Specialty Training Standard (STS), reflect what career ladder personnel are actually doing in the field.

Comparisons of the duties and tasks performed across DAFSCs 11832 and 11852 revealed minimal differences between the two skill levels. Although the 3-skill level members spend more of their time performing preflight and postflight tasks (Duty F) and in-flight crew duties (Duty I), these same functions are performed by equal numbers of 5-skill level members. Data also indicate that some 5-skill level personnel perform a greater number of training tasks on average compared to the 3-skill level group. These extra training tasks do not reveal a significant difference between the skill level groups; therefore, the 3- and 5-skill level members are combined in this report for comparison with the 7-skill level group.

Table 5 of this report displays the distribution of DAFSC group members across career ladder jobs. As this table indicates, members from both skill level groups work in each of the specialty jobs. Most of the 3-/5-skill level personnel (67 percent) are found in the ART Personnel job, while 45 percent of the 7-skill level members are ART Instructors. But there are some (18 percent) of the 3-/5-skill level members working as ART Instructors, and 23 percent of the 7-skill level group (approximately 9 individuals) are part of the ART Personnel group. This situation can be expected since many 118X2 personnel are in "one-deep" positions on their assigned aircraft, which requires them to perform all necessary functions regardless of skill level. Table 6 shows the average percent time spent on duties across both skill level groups. Generally, the 3-/5-skill level members spend more time performing preflight and postflight tasks, equipment maintenance (Duty G), and in-flight crew duties. The 7-skill level group spends more time on supervisory and administrative functions (Duties A thru E). Overall, Table 6 reflects few significant differences across the skill level groups in terms of time spent on the job.

TABLE 5

DISTRIBUTION OF DAFSC GROUP MEMBERS ACROSS CAREER LADDER JOB GROUPS
(As a Percentage of DAFSC Groups)*

JOB GROUPS	DAFSC 11832/ 11852 (N=57)	DAFSC 11872 (N=40)
I. AIRBORNE RADAR SYSTEMS CLUSTER PERSONNEL (N=98)	100	100
A. AIRBORNE RADAR TECHNICIAN (ART) (N=47) PERSONNEL	(67)	(23)
B. ART INSTRUCTORS (N=28)	(18)	(45)
C. ART STANDARDIZATION/EVALUATION (N=6) PERSONNEL	(5)	(8)
D. NOT GROUPED BUT FOUND IN CLUSTER (N=17)**	(10)	(28)

* Columns may not add up to 100 percent due to rounding

** Those incumbents whose jobs differ from the
identified specialty jobs

() Indicates a group within a cluster

TABLE 6

AVERAGE PERCENT TIME SPENT ON DUTIES BY DAFSC GROUPS*

JOB GROUPS	DAFSC 11832/ 11852 (N=57)	DAFSC 11872 (N=40)
A. ORGANIZING AND PLANNING	1	3
B. DIRECTING AND IMPLEMENTING	2	4
C. INSPECTING AND EVALUATING	1	3
D. TRAINING	3	8
E. PERFORMING GENERAL ADMINISTRATIVE AND SUPPLY TASKS	4	5
F. PERFORMING PREFLIGHT AND POSTFLIGHT TASKS	21	17
G. MAINTAINING MISSION CREW COMPARTMENT EQUIPMENT	26	23
H. MAINTAINING INTERROGATION IDENTIFICATION FRIEND OR FOE (IFF) EQUIPMENT	6	6
I. PERFORMING IN-FLIGHT CREW DUTIES	31	27
J. PERFORMING MOBILITY TASKS	5	5

* Columns may not add to 100 percent due to rounding

Skill-Level Descriptions

DAFSC 11832/11852. The 57 members of the 3- and 5-skill level group comprise 58 percent of the survey sample. Their job is mostly technical, involving three primary duties (F, G, and I) which account for 78 percent of their job time (see Table 6). The remainder of their job time chiefly involves maintaining IFF equipment (Duty H) and performing mobility functions (Duty J). The group is concentrated in the ART Personnel job (as indicated by Table 5), but some members perform the instructor or standardization/evaluation jobs as well. Group members perform 181 tasks on average, with 77 tasks accounting for over 50 percent of their time on the job. Table 7 displays representative tasks performed by this group, and Table 9 shows tasks which differentiate the 3- and 5-skill level personnel from the 7-skill level members.

DAFSC 11872. This group of 40 members accounts for 41 percent of the survey sample. Group members are predominantly ART Instructor personnel, though 23 percent have ART Personnel jobs. The time spent figures in Table 6 indicate this group is technically oriented, though 23 percent of their job time involves supervising, training, and administration (Duties A thru E). The group performs an average of 203 tasks, and 90 of these tasks comprise over half of their job time. Table 8 shows tasks representative of the group. Table 9 indicates this group is responsible for conducting most of the training and evaluation functions for the career ladder.

Summary

The job performed by the AFSC 118X2 member is mostly technical through the 7-skill level. The 3- and 5-skill level personnel perform essentially the same tasks, although the 5-skill level members conduct some of the training for the career ladder. The 7-skill level members gain more supervisory roles as they progress, but mostly they perform jobs similar to those of 3- and 5-skill level personnel. As Table 6 shows, only 18 percent of the job time for the typical 7-skill level member involves supervision (Duties A thru D), and many of these supervisory activities are only done while flying operational missions. The data clearly show the highly technical nature of the skill level jobs.

ANALYSIS OF AFR 39-1 SPECIALTY DESCRIPTIONS

The results of the specialty job structure and skill level analyses were compared to the AFR 39-1 Specialty Descriptions (dated 1 January 1988) for the Airborne Radar Systems Specialty. A review of each specialty description indicates that they are both well supported by survey data, with one exception. The 11832/11852 specialty description does not mention some coordination-type activities performed by this group. These activities include coordinating the control, status, and configuration of the IFF and radar surveillance systems, with the mission crew commander (MCC) and Air

TABLE 7

REPRESENTATIVE TASKS PERFORMED BY DAFSC 11832/11852 AIRMEN
(PERCENT MEMBERS PERFORMING)

TASKS	DAFSC 11832/ 11852 (N=57)
F131 ASSIST IN LOADING, SECURING, OR UNLOADING CREW GEAR ON AIRCRAFT	100
G191 MONITOR LOCATIONS DISPLAYED ON RCMP	100
G190 MONITOR LIQUID COOLING SYSTEM (LCS) METERS AND GAUGES	100
G169 ANALYZE SURVEILLANCE RADAR MANUAL TEST RESULTS	100
G200 PERFORM RADAR TURN-ON PROCEDURES	100
I237 COMPLETE AND MAINTAIN AIRBORNE RADAR TECHNICIAN (ART) IN-FLIGHT LOG FORMS	100
I262 MAINTAIN FLIGHT PUBLICATIONS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	100
G192 MONITOR SURVEILLANCE RADAR AUTOMATIC RECONFIGURATIONS	100
G168 ANALYZE SURVEILLANCE RADAR AUTOMATIC TEST RESULTS	100
F152 PERFORM PREFLIGHT INSPECTIONS OF PERSONAL EQUIPMENT	100
F150 PERFORM PREFLIGHT INSPECTIONS OF IFF UNITS	100
F151 PERFORM PREFLIGHT INSPECTIONS OF LCS, POWER FEEDER DUCT COOLING SYSTEM (PFDCS), & ANTENNA COOLING CONTROL PANELS	100
G199 PERFORM RADAR TURN-OFF UNDER RCMP CONTROL	100
F149 PERFORM PREFLIGHT INSPECTIONS OF EMERGENCY EQUIPMENT	100
F143 PARTICIPATE IN CREW MAINTENANCE DEBRIEFINGS	100
G187 MANUALLY CONTROL SURVEILLANCE RADAR CONFIGURATIONS USING KEYBOARD ACTION	100
F161 VISUALLY INSPECT CONDITION OF RADAR EQUIPMENT CABINETS	100
I287 SECURE EQUIPMENT FOR DESCENT OR LANDING	100
F162 VISUALLY INSPECT CONDITION OF ROTODOME EXTERIORS	100
G201 PERFORM SURVEILLANCE RADAR CAPABILITY ASSESSMENTS (RCA)	100
F167 VISUALLY INSPECT SURVEILLANCE RADAR EQUIPMENT IN AFT LOWER LOBES	98
F132 BRIEF MISSION CREW COMMANDER (MCC) AND AIR SURVEILLANCE OFFICER (ASO) ON SYSTEM MALFUNCTIONS AND LIMITATIONS	98
G198 PERFORM MANUAL FAULT ANALYSES	98
F164 VISUALLY INSPECT LIQUID COOLING SYSTEMS	98
G182 FAULT ISOLATE TRANSMITTER COMPONENTS USING BIT/FIT	98
F166 VISUALLY INSPECT SF-6 SYSTEMS	98
F165 VISUALLY INSPECT PANELS, LOCKS, OR FASTENERS	98

TABLE 8

REPRESENTATIVE TASKS PERFORMED BY DAFSC 11872 AIRMEN
(PERCENT MEMBERS PERFORMING)

TASKS	DAFSC 11872 (N=40)
G191 MONITOR LOCATIONS DISPLAYED ON RCMP	100
I237 COMPLETE AND MAINTAIN AIRBORNE RADAR TECHNICIAN (ART) IN-FLIGHT LOG FORMS	100
G190 MONITOR LIQUID COOLING SYSTEM (LCS) METERS AND GAUGES	100
G187 MANUALLY CONTROL SURVEILLANCE RADAR CONFIGURATIONS USING KEYBOARD ACTION	100
G200 PERFORM RADAR TURN-ON PROCEDURES	100
G199 PERFORM RADAR TURN-OFF UNDER RCMP CONTROL	100
I255 COORDINATE SURVEILLANCE RADAR CONTROL WITH ASO	100
H225 PERFORM IFF TURN-ON AND TURN-OFF PROCEDURES	100
I235 BRIEF MCC AND ASO ON SURVEILLANCE RADAR AND IFF EQUIPMENT STATUS	100
G192 MONITOR SURVEILLANCE RADAR AUTOMATIC RECONFIGURATIONS	98
G198 PERFORM MANUAL FAULT ANALYSES	98
G209 RECYCLE RADAR PROGRAMS	98
I234 ANALYZE EQUIPMENT FOR BEST MISSION CONFIGURATIONS	98
G182 FAULT ISOLATE TRANSMITTER COMPONENTS USING BIT/FIT	98
F167 VISUALLY INSPECT SURVEILLANCE RADAR EQUIPMENT IN AFT LOWER LOBES	98
G185 INTERPRET ON-LINE BIT MESSAGES	98
I254 COORDINATE SENSOR SETTINGS WITH ASO	98
F152 PERFORM PREFLIGHT INSPECTIONS OF PERSONAL EQUIPMENT	97
G169 ANALYZE SURVEILLANCE RADAR MANUAL TEST RESULTS	95
G168 ANALYZE SURVEILLANCE RADAR AUTOMATIC TEST RESULTS	95
I262 MAINTAIN FLIGHT PUBLICATIONS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	95
F145 PARTICIPATE IN GENERAL OR SPECIALIZED MISSION PLANNING MEETINGS	95
G180 FAULT ISOLATE SURVEILLANCE RADAR SYSTEMS USING BIT/FIT	95
I259 ESTABLISH PRIORITIES FOR RESTORING EQUIPMENT TO OPERATIONAL STATUS	95
F131 ASSIST IN LOADING, SECURING, OR UNLOADING CREW GEAR ON AIRCRAFT	90
D68 CONDUCT IN-FLIGHT TRAINING	88

TABLE 9

TASKS WHICH BEST DIFFERENTIATE BETWEEN DAFSC 11832/11852 AND 11872 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS	DAFSC		DAFSC		DIFFERENCE
	11832/ 11852 (N=57)	11872 (N=40)	11832/ 11852 (N=57)	11872 (N=40)	
D82 EVALUATE PERSONNEL TO DETERMINE NEED FOR TRAINING	7	70	7	70	-63
D83 EVALUATE PROGRESS OF TRAINEES	19	78	19	78	-59
B23 COUNSEL PERSONNEL	28	80	28	80	-52
D75 DETERMINE IN-FLIGHT TRAINING REQUIREMENTS	25	75	25	75	-50
B38 SUPERVISE AIRBORNE RADAR SYSTEMS SPECIALISTS (AFSC 11852)	18	65	18	65	-47
D88 PLAN TRAINING	19	65	19	65	-46
D91 PROCURE TRAINING AIDS, SPACE, OR EQUIPMENT	23	65	23	65	-42
D68 CONDUCT IN-FLIGHT TRAINING	47	88	47	88	-41
E123 PARTICIPATE IN STAFF MEETINGS	16	55	16	55	-39
B34 INITIATE ACTION TO CORRECT SUBSTANDARD PERFORMANCE OF PERSONNEL	19	56	19	56	-37
D72 COUNSEL TRAINEES ON TRAINING PROGRESS	39	75	39	75	-36
B86 MAKE ENTRIES ON TRAINING RECORDS	44	78	44	78	-34
D70 CONDUCT OJT	28	60	28	60	-32

Surveillance Officer (ASO). These coordinating functions are also performed by the 7-skill level DAFSC group, but they are currently omitted from the 11872 specialty description (dated 1 February 1988) as well. Based on the high percent members performing these tasks for both skill level groups, it is recommended that these functions be added to the corresponding specialty descriptions.

TRAINING ANALYSIS

Occupational survey data provide one of several sources of information which can be used to make training programs more relevant and meaningful to first-term personnel. Factors useful for evaluating training include the description of the job being performed by first-enlistment members and their overall distribution across career ladder jobs; percentages of first-enlistment (1-48 months TAFMS) personnel performing specific tasks; as well as TE and TD ratings (previously explained in the SURVEY METHODOLOGY section).

To assist in the examination of the AFSC 118X2 Specialty Training Standard (STS) and the Plan of Instruction (POI) for course E3AQR11832 000 (dated 15 August 1988), technical school personnel from Keesler TTC matched tasks from the 118X2 job inventory to appropriate sections of these documents. This matching process allowed data comparisons to be made to those documents. A similar match was done by training personnel from the 552 AWACW, Tinker AFB OK to both the 118X2 STS and the POI for course E3000BQOQX, Airborne Radar Technician (dated May 1987). Computer listings displaying the results of these STS and POI matchings, to include percent members performing tasks, TE, and TD ratings for each task, have been sent to the training personnel at both Keesler AFB and Tinker AFB for their review. Some of this information is presented in the pages that follow.

First-Enlistment Personnel

There were 24 members in their first-enlistment, representing 24 percent of the survey sample. This group primarily performs the technical aspects of the career ladder job, especially the preflight and postflight tasks. Only 6 percent of this group's job time involves any sort of supervisory activity. A list of tasks commonly performed by group members is found in Table 10. As would be expected, these are the same tasks performed by the 3- and 5-skill level personnel, given there are 24 first-term members comprising half of this skill level group.

The distribution of first-term personnel across the specialty jobs is displayed in Figure 2. Most of the group (83 percent) is concentrated in the ART Personnel job. Another 13 percent identified themselves as ART Instructors, while the remaining 4 percent (1 individual) did not group with any specialty job. None of the first-term members were identified as standardization/evaluation personnel. Overall, these data indicate that tasks associated with the ART Personnel job should be emphasized during first-enlistment training.

TABLE 10

REPRESENTATIVE TASKS PERFORMED BY DAFSC 118X2 AIRMEN WITH 1-48 MONTHS TAFMS

TASKS	PERCENT MEMBERS PERFORMING (N=24)
F131 ASSIST IN LOADING, SECURING, OR UNLOADING CREW GEAR ON AIRCRAFT	100
G191 MONITOR LOCATIONS DISPLAYED ON RCMP	100
G200 PERFORM RADAR TURN-ON PROCEDURES	100
I237 COMPLETE AND MAINTAIN AIRBORNE RADAR TECHNICIAN (ART) IN-FLIGHT LOG FORMS	100
G190 MONITOR LIQUID COOLING SYSTEM (LCS) METERS AND GAUGES	100
G199 PERFORM RADAR TURN-OFF UNDER RCMP CONTROL	100
G169 ANALYZE SURVEILLANCE RADAR MANUAL TEST RESULTS	100
G192 MONITOR SURVEILLANCE RADAR AUTOMATIC RECONFIGURATIONS	100
F132 BRIEF MISSION CREW COMMANDER (MCC) AND AIR SURVEILLANCE OFFICER (ASO) ON SYSTEM MALFUNCTIONS AND LIMITATIONS	100
G168 ANALYZE SURVEILLANCE RADAR AUTOMATIC TEST RESULTS	100
F143 PARTICIPATE IN CREW MAINTENANCE DEBRIEFINGS	100
F152 PERFORM PREFLIGHT INSPECTIONS OF PERSONAL EQUIPMENT	100
I262 MAINTAIN FLIGHT PUBLICATIONS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	100
F149 PERFORM PREFLIGHT INSPECTIONS OF EMERGENCY EQUIPMENT	100
I234 ANALYZE EQUIPMENT FOR BEST MISSION CONFIGURATIONS	100
F151 PERFORM PREFLIGHT INSPECTIONS OF LCS, POWER FEEDER DUCT COOLING SYSTEM (PFDCS), & ANTENNA COOLING CONTROL PANELS	100
F150 PERFORM PREFLIGHT INSPECTIONS OF IFF UNITS	100
F161 VISUALLY INSPECT CONDITION OF RADAR EQUIPMENT CABINETS	100
G198 PERFORM MANUAL FAULT ANALYSES	100
G183 INHIBIT OR ENABLE SURVEILLANCE RADAR AUTOMATIC TESTS	100
I287 SECURE EQUIPMENT FOR DESCENT OR LANDING	100
F138 FILE AIRBORNE RADAR TECHNICIAN (ART) IN-FLIGHT LOGS IN AIRCRAFT HISTORY BOOKS	100
G201 PERFORM SURVEILLANCE RADAR CAPABILITY ASSESSMENTS (RCA)	100
F159 STOW EQUIPMENT AND GALLEY ITEMS IN AFT SECTION OF AIRCRAFT	100
F144 PARTICIPATE IN CREW OPERATION DEBRIEFINGS	100
F167 VISUALLY INSPECT SURVEILLANCE RADAR EQUIPMENT IN AFT LOWER LOBES	96

118X2 FIRST ENLISTMENT DISTRIBUTION
ACROSS SPECIALTY JOBS
(N=24)

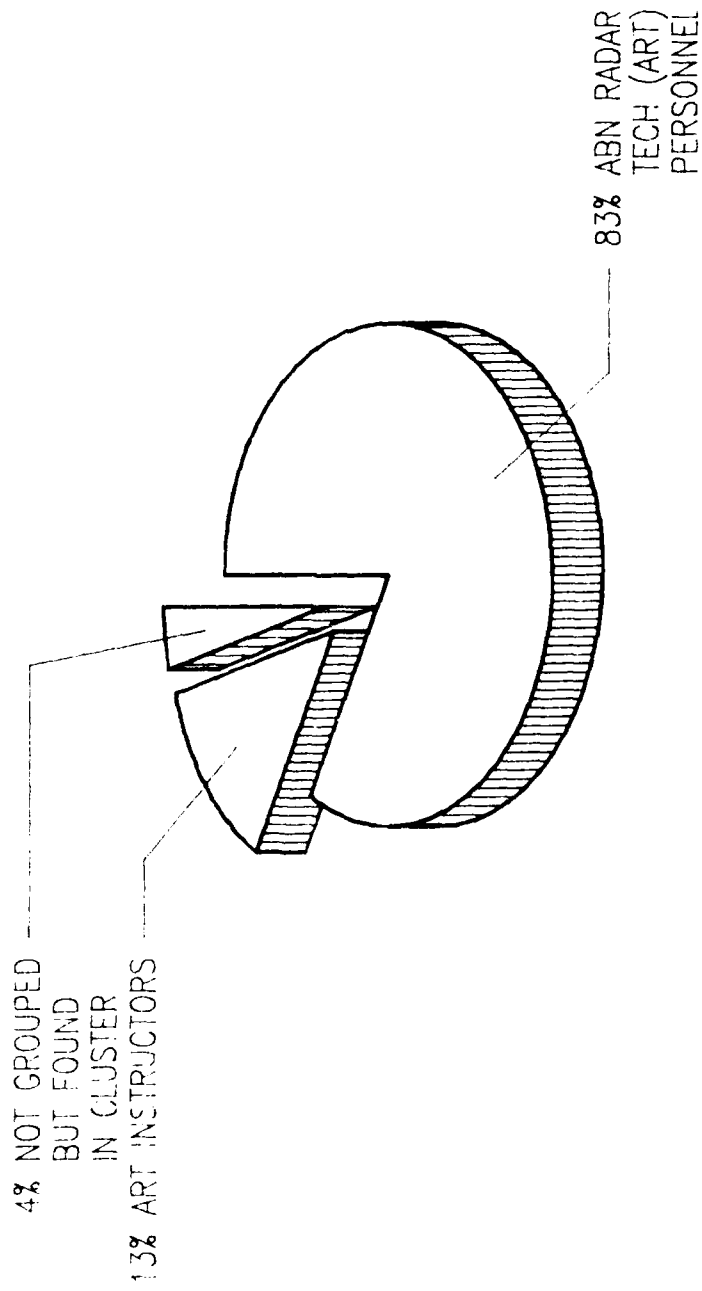


Figure 2

Training Emphasis and Task Difficulty Data

Training Emphasis (TE) and Task Difficulty (TD) ratings are based on the judgments of experienced career ladder NCOs working in Air Force operational units. TE ratings provide training personnel with a rank ordering of tasks considered important for first-term airman training. TD ratings measure the relative learning difficulty of each job inventory task. These TE and TD ratings, combined with percentages of first-enlistment personnel performing tasks, serve as a basis for determining whether training adjustments should be made. To help in this determination, an Automated Training Indicator (ATI) is computed for each task in the inventory. ATI combines first-enlistment percent members performing, TE, and TD data to compute training decisions based on Atch 1, ATCR 52-22. The computed ATI is numbered on a 1 to 18 scale, with an 18 being the highest level of training indicated. An ATI of 8 or less, leads to a training decision of on-the-job-training (OJT) only. To illustrate how the ATI is computed: if a task has received high TE and TD ratings, and also has a high percentage of first-term members performing, then a high ATI rating is assigned to the task. With a high ATI rating, strong recommendations can be made to emphasize training that task in the basic residence course. For a more complete description of the TE and TD ratings, see the Task Factor Administration section in SURVEY METHODOLOGY.

In this OSR, the training emphasis ratings were collected through the responses of 35 experienced career ladder NCOs. These ratings provided a rank-ordering of tasks from a high degree of training emphasis to no training required. The average emphasis rating was 3.54, with a standard deviation of 2.13, so tasks receiving ratings higher than 5.67 were considered to require high emphasis in training.

The tasks having the highest TE ratings covered fault isolation of a variety of components, aircraft emergency procedures, analysis of surveillance radar test results, and flight publications maintenance. A more complete listing of the highest TE rated tasks is found in Table 11. All of these tasks were performed by significantly high numbers of first-enlistment personnel, more indication that these tasks are critical for first-enlistment training.

TD ratings for this survey were assessed through the responses of 24 experienced career ladder NCOs. These ratings were standardized to provide a rank-ordered task list with an average difficulty of 5.00 and a standard deviation of 1.00. A listing of those tasks having the highest TD ratings is found in Table 12. These tasks mostly involve standardization/evaluation functions, drafting correspondence, program development, and training. More than half of the listed tasks are not performed by any first-enlistment personnel, and the corresponding TE ratings are also very low. Except for the fault analysis tasks shown in Table 12, none of the high TD-rated tasks listed are recommended for first-term training.

TABLE 11

TASKS RATED HIGHEST IN TRAINING EMPHASIS (TE)

TASKS	PERCENT MEMBERS PERFORMING			
	TNG EMP*	FIRST ENLIST (N=24)	TSK DIF**	
G182 FAULT ISOLATE TRANSMITTER COMPONENTS USING BIT/FIT	6.83	100	6.16	
G177 FAULT ISOLATE RADAR DATA CORRELATOR (RDC) COMPONENTS USING BIT/FIT	6.80	100	6.41	
I282 PERFORM OR PRACTICE EMERGENCY AIRCRAFT PROCEDURES	6.77	100	5.43	
G178 FAULT ISOLATE ROTODOME COMPONENTS USING BIT/FIT	6.63	96	5.85	
F149 PERFORM PREFLIGHT INSPECTIONS OF EMERGENCY EQUIPMENT	6.54	100	4.20	
G180 FAULT ISOLATE SURVEILLANCE RADAR SYSTEMS USING BIT/FIT	6.49	100	6.14	
G198 PERFORM MANUAL FAULT ANALYSES	6.46	100	6.36	
I262 MAINTAIN FLIGHT PUBLICATIONS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS				
G169 ANALYZE SURVEILLANCE RADAR MANUAL TEST RESULTS	6.46	100	5.14	
G179 FAULT ISOLATE STABLE LOCAL OSCILLATOR (STALO) COMPONENTS USING BIT/FIT	6.43	100	5.80	
I285 REVIEW OR ANNOTATE AIRCRAFT WRITE-UPS ON AFTO FORMS 781 SERIES (MAINTENANCE DISCREPANCY AND WORK DOCUMENT)	6.43	100	5.95	
G170 FAULT ISOLATE ANALOG RECEIVER COMPONENTS USING BUILT-IN TEST/FAULT ISOLATION TEST (BIT/FIT)	6.43	100	4.75	
I259 ESTABLISH PRIORITIES FOR RESTORING EQUIPMENT TO OPERATIONAL STATUS	6.40	100	6.03	
G176 FAULT ISOLATE RADAR CONTROL MAINTENANCE PANEL (RCMP) COMPONENTS USING BIT/FIT	6.40	100	5.98	
G168 ANALYZE SURVEILLANCE RADAR AUTOMATIC TEST RESULTS	6.34	96	5.94	
G172 FAULT ISOLATE DIGITAL DOPPLER PROCESSOR (DDP) COMPONENTS USING BIT/FIT	6.31	100	5.88	
G187 MANUALLY CONTROL SURVEILLANCE RADAR CONFIGURATIONS USING KEYBOARD ACTION	6.31	100	6.24	
	6.29	100	5.43	

* Training Emphasis (TE) has an average of 3.54 and
a Standard Deviation of 2.13 (High TE = 5.67)

** Task Difficulty (TD) has an average of 5.0 and
a Standard Deviation of 1.0

TABLE 11 (CONTINUED)

TASKS RATED HIGHEST IN TRAINING EMPHASIS (TE)

TASKS	PERCENT MEMBERS PERFORMING			
	TNG EMP*	FIRST ENLIST (N=24)	TSK DIF**	
G171 FAULT ISOLATE DATA COMMUNICATIONS USING BIT/FIT	6.26	96	6.04	
G181 FAULT ISOLATE SYNCHRONIZER COMPONENTS USING BIT/FIT	6.23	100	5.85	
I275 OPERATE EMERGENCY LIGHTS	6.20	100	3.59	
G191 MONITOR LOCATIONS DISPLAYED ON RCMP	6.17	100	4.62	
F152 PERFORM PREFLIGHT INSPECTIONS OF PERSONAL EQUIPMENT	6.14	100	4.33	
F167 VISUALLY INSPECT SURVEILLANCE RADAR EQUIPMENT IN AFT LOWER LOBES	6.14	96	4.80	
H231 REMOVE OR REPLACE CIRCUIT CARD ASSEMBLIES WITHIN RADAR TARGET DATA PROCESSORS (RTDP)	6.09	100	5.38	
I276 OPERATE FIRE EXTINGUISHERS	6.09	71	4.00	
G188 MANUALLY CONTROL SURVEILLANCE RADAR MODES USING KEYBOARD ACTION	6.06	96	5.38	

* Training Emphasis (TE) has an average of 3.54 and
a Standard Deviation of 2.13 (High TE = 5.67)

** Task Difficulty (TD) has an average of 5.0 and
a Standard Deviation of 1.0

TABLE 12

TASKS RATED HIGHEST IN TASK DIFFICULTY (TD)

TASKS	TSK DIF*	PERCENT MEMBERS PERFORMING				TNC EMP**
		FIR ¹¹ ENLIST (N=242)	DAFSC 11852 (N=48)	DAFSC 11872 (N=40)		
A11	PLAN EQUIPMENT OR SOFTWARE MODIFICATION PROGRAMS	0	5	18	.37	
C42	CONDUCT STANDARDIZATION/EVALUATION CRITIQUES	0	10	13	.83	
C54	EVALUATE SYSTEM OR SOFTWARE DESIGNS	0	13	20	.34	
C43	CONDUCT STANDARDIZATION/EVALUATIONS	0	8	15	.51	
D77	DEVELOP NEW EQUIPMENT TRAINING PROGRAMS	0	8	23	.89	
D84	EVALUATE TRAINING METHODS OR TECHNIQUES	0	8	45	1.09	
D89	PREPARE JOB QUALIFICATION STANDARDS (JQS)	0	2	13	.49	
B28	DRAFT RECOMMENDATIONS FOR CHANGES IN EQUIPMENT OR SOFTWARE	13	21	20	1.57	
C41	CONDUCT IN-FLIGHT PROFICIENCY EVALUATIONS	8	17	43	1.17	
C45	EVALUATE DATA ON MODIFICATION OF EQUIPMENT OR SOFTWARE	0	23	25	.66	
D81	EVALUATE EFFECTIVENESS OF TRAINING PROGRAMS	0	10	43	.89	
C62	WRITE STAFF STUDIES, SURVEYS, OR SPECIAL REPORTS, OTHER THAN TRAINING REPORTS	0	6	23	.40	
B29	IMPLEMENT COST-REDUCTION PROGRAMS	0	2	8	.89	
C49	EVALUATE OR DETERMINE CAUSES OF MISSION OPERATIONAL DISCREPANCIES	8	13	30	2.23	
A8	ESTABLISH WORK METHODS	13	13	38	2.09	
A6	DEVELOP SELF-INSPECTION PROGRAMS	0	17	30	.77	
G197	PERFORM MALFUNCTION ANALYSES USING HARMONIZATION PROGRAMS	63	73	73	4.20	
A5	DEVELOP INSPECTION PROCEDURES	4	15	25	.83	
D74	DETERMINE ACADEMIC COURSE TRAINING REQUIREMENTS	8	13	45	1.46	
B23	COUNSEL PERSONNEL	4	31	80	1.60	
C58	INVESTIGATE ACCIDENTS OR INCIDENTS	0	2	5	.49	

* Task Difficulty (TD) has an average of 5.0 and a Standard Deviation of 1.0

** Training Emphasis (TE) has an average of 3.54 and a Standard Deviation of 2.13 (High TE = 5.67)

TABLE 12 (CONTINUED)

TASKS RATED HIGHEST IN TASK DIFFICULTY (TD)

TASKS	TSK DIF*	PERCENT MEMBERS PERFORMING			TNG EMP**
		FIRST ENLIST (N=24)	DAFSC 11852 (N=48)	DAFSC 11872 (N=40)	
A19 WRITE JOB DESCRIPTIONS	6.42	0	2	20	.57
D78 DEVELOP PERFORMANCE TESTS	6.41	0	10	28	.74
B27 DIRECT QUALITY CONTROL PROGRAMS	6.41	0	2	10	.60
G177 FAULT ISOLATE RADAR DATA CORRELATOR (RDC) COMPONENTS USING BIT/FIT	6.41	100	100	95	6.80
D90 PREPARE LESSON PLANS	6.39	17	40	68	2.54
D83 EVALUATE PROGRESS OF TRAINEES	6.38	8	21	78	1.91
G198 PERFORM MANUAL FAULT ANALYSES	6.36	100	100	98	6.46
D82 EVALUATE PERSONNEL TO DETERMINE NEED FOR TRAINING	6.35	0	8	70	1.46
D79 DIRECT OR IMPLEMENT TRAINING PROGRAMS	6.33	4	19	48	1.31

* Task Difficulty (TD) has an average of 5.0 and
a Standard Deviation of 1.0

** Training Emphasis (TE) has an average of 3.54 and
a Standard Deviation of 2.13 (High TE = 5.67)

Specialty Training Standard (STS)

Comprehensive review of STS 118X2, dated January 1987, allowed STS items to be compared with survey data. Two separate reviews were made, one with the assistance of the previously mentioned Technical Training personnel from Keesler AFB, and the other with the help of members from the 552 AWACW, Tinker AFB. Occupational Measurement Center (OMC) personnel from Detachment 3 (Keesler AFB) and Detachment 4 (Sheppard AFB) were present during each of the matches. Most of the STS paragraphs and subparagraphs containing subject matter knowledge or general knowledge requirements were not examined. STS items which have a "K" prefix next to them, delineate items matched at Keesler AFB, and those items having a "T" prefix were matched at Tinker AFB.

The normal criterion for inclusion of STS items is that tasks matched to the STS item be performed by at least 20 percent of the first-job, first-enlistment, 5-skill level, or 7-skill level DAFSC personnel. Because there were no first-job (1-24 months TAFMS) members identified in this survey, the STS evaluation does not consider that group. Based upon the 20 percent performing criterion, the STS was found to provide totally comprehensive coverage of the work performed by personnel in the field. No deletions of STS items are required nor recommended at this time.

Many areas of the 118X2 STS were identified for review of 3-skill level proficiency coding by training personnel and subject matter experts. Table 13 shows some examples of these STS items. Mostly, the data support upgrading some proficiency codes from a subject knowledge level to a task knowledge and performance level. For example, items covering the Surveillance Radar System (section 10a) are currently coded "B" which reflects a subject knowledge training requirement only. However, the high percentage of first-enlistment personnel performing corresponding tasks, and the high ATI ratings indicate these STS items could be more appropriately coded as "2b," to indicate task knowledge and performance requirements. Three of these items are presented in Table 13. Other examples include items K12d, K12g(2), and K12i, covering radar transmitter, data communications, and interrogator equipment respectively. These items have task knowledge level codes, but data indicate they are also performance related items. One other section that may be considered for upgrading of proficiency codes is T12j, Isolate Malfunctions in Environmental Systems. Items from this section are currently dashed (indicating OJT training only), but data support training these items to task knowledge and performance levels.

STS item T8a, which covers technical orders, is recommended for a downgrading of code level. Currently, this item has an "A" code, but data support dashed the code and training this item through OJT. Training personnel should carefully review all of the 3-skill level proficiency codes for the AFSC 118X2 STS.

Table 14 displays tasks (most involving mobility functions) not matched to the STS, which have greater than 20 percent members performing them. Also, the TE ratings for most of these tasks are above average. Data for these unreferenced tasks suggest they should be included in the STS. These tasks may already fit under an STS paragraph but simply were not referenced to one,

TABLE 13

STS ELEMENTS REQUIRING REVIEW OF 3-SKILL LEVEL PROFICIENCY CODES

STS ELEMENT (WITH SELECTED SAMPLE TASKS)	PERCENT MEMBERS PERFORMING			TD RATING**
	PROF CODE	1ST ENL (N=24)	TE RATING*	
0107 K10a(3). Radar Data Correlator				
G0177 Fault isolate radar data correlator (RDC) components using built-in test/fault isolation test (BIT/FIT)	B	100	6.80	6.41
0110 K10a(6). Transmitter Group				
G0177 Fault isolate transmitter components using BIT/FIT	B	100	6.83	6.16
0112 K10a(8). Analog Receiver				
0177 Fault isolate analog receiver components using BIT/FIT	B	100	6.40	6.03
0157 K12d. Harmonize Radar Transmitter				
G0197 Perform malfunction analyses using harmonization programs	b	63	4.20	6.50

* Training Emphasis (TE) has an average of 3.54 and
a Standard Deviation of 2.13 (High TE = 5.67)

** Task Difficulty (TD) has an average of 5.0 and
a Standard Deviation of 1.0

TABLE 13 (CONTINUED)

STS ELEMENTS REQUIRING REVIEW OF 3-SKILL LEVEL PROFICIENCY CODES

STS ELEMENT (WITH SELECTED SAMPLE TASKS)	PERCENT MEMBERS PERFORMING				TD RATING**
	PROF CODE	1ST ENL (N=24)	TE RATING*		
<hr/>					
0165 K12g(2). Data communications					
<hr/>					
G0171 Fault isolate data communications using BIT/FIT	b	96	6.26		6.04
<hr/>					
0180 K12i. Isolate interrogator faults using onboard test monitor and maintenance (OBTM&M)					
<hr/>					
H0228 Perform trouble analysis using OBTM&M false alarms	b	96	5.71		5.19
H0227 Perform trouble analysis by visually detecting faults		92	5.49		5.47
<hr/>					
0394 T12j(2). Liquid cooling					
<hr/>					
G0202 Perform surveillance radar cooling loss actions	b/-	100	5.80		5.49
I0280 Perform ethylene, glycol, and water (EGW) leak isolations		96	5.49		5.38
<hr/>					
0396 T12j(4). AFT forced air					
<hr/>					
G0202 Perform surveillance radar cooling loss actions	b/-	100	5.80		5.49
H0223 Perform IFF equipment cooling loss actions		75	5.40		4.76
<hr/>					
0270 T8a. Air Force technical order system					
<hr/>					
E0125 Research Technical Order Indexes	A	13	.54		4.57
E0115 Initiate Technical Order forms, such as AFTO Forms 22 110, 110A, 110B, and 131		0	1.77		5.14

* Training Emphasis (TE) has an average of 3.54 and a Standard Deviation of 2.13 (High TE = 5.67)

** Task Difficulty (TD) has an average of 5.0 and a Standard Deviation of 1.0

TABLE 14

TASKS WITH MORE THAN 20 PERCENT MEMBERS PERFORMING NOT MATCHED TO STS ELEMENTS
(PERCENT MEMBERS PERFORMING)

TASKS	PERCENT MEMBERS PERFORMING				
	FIRST ENLIST (N=24)	DAFSC 11852 (N=57)	DAFSC 11872 (N=40)	TNG EMP*	TSK DIF**
<u>MOBILITY TASKS</u>					
J296 DON AND DOFF CHEMICAL WARFARE PERSONNEL PROTECTIVE CLOTHING	96	88	83	4.31	4.66
J300 MAINTAIN IMMUNIZATION RECORDS	96	85	88	4.34	3.63
J316 PREPARE PERSONAL CLOTHING AND EQUIPMENT FOR DEPLOYMENT	96	92	83	4.23	3.94
J293 ACCOMPLISH MOBILITY PROCESS CHECKLISTS	88	73	70	4.29	3.76
J310 PERFORM STANDBY ALERT PROCEDURES	83	67	73	4.11	4.61
J311 PRACTICE ALERT (FAST) REACTION PROCEDURES	83	63	50	3.54	4.74
J298 FIRE WEAPONS, SUCH AS .38, .45, AND 9MM CALIBER HANDGUNS AND M-16 RIFLES	79	71	58	3.83	4.75
J312 PRACTICE ALERT FORCE EXERCISES	67	54	38	3.40	4.58
J315 PRACTICE SELF-PROTECTION FROM EXTREME WEATHER	67	54	58	3.46	4.35
J307 PERFORM DECONTAMINATION PROCEDURES FOR CHEMICAL WARFARE	42	46	28	3.14	5.49
J299 IDENTIFY AND REPORT SUSPECTED ORDNANCE	33	38	35	2.97	4.68
<u>GENERAL AND ADMINISTRATIVE TASKS</u>					
F131 ASSIST IN LOADING, SECURING, OR UNLOADING CREW GEAR ON AIRCRAFT	100	100	90	4.66	3.73
E118 MAINTAIN CURRENCY REQUIREMENTS, SUCH AS FLIGHT PHYSICAL LIFE SUPPORT TRAINING, AND ALTITUDE CHAMBER	58	67	83	4.57	4.17
E120 MAINTAIN MONTHLY FLYING OR ALERT SCHEDULES	42	40	50	.83	4.34

* Training Emphasis (TE) has an average of 3.54 and
a Standard Deviation of 2.13 (High TE = 5.67)

** Task Difficulty (TD) has an average of 5.0 and
a Standard Deviation of 1.0

or they may be functions not currently reflected in any STS element. The data indicate a review of the STS is necessary, for the possible inclusion of these tasks in the next STS revision.

Plans of Instruction (POI)

The POIs for Course E3AQR11832-000 (dated 15 August 1988) and Course E3000BQOQX (dated May 1987), were reviewed with the assistance of technical school personnel at Keesler TTC and Tinker AFB, respectively. Job inventory tasks were matched to these documents to provide data on TE, TD, and percent first-enlistment personnel performing tasks. In accordance with ATCR 52-22, and for cost effectiveness reasons, if the probability of first-enlistment performance for a POI objective falls below 30 percent, then that objective should not be taught in a resident training course without further justification. For example, it may be justifiable to retain a POI objective having less than 30 percent members performing tasks, based upon high TE and TD ratings for those tasks matched to the objective. Critical or safety items may also be justified for formal training. The Automated Training Indicator (ATI) may assist training personnel in evaluating POI objectives. For a more complete explanation of ATI, see the Training Emphasis and Task Difficulty section in TRAINING ANALYSIS.

A review of the tasks matched to the E3AQR11832 000 POI revealed that those blocks and units of instruction which had matching tasks were all supported by high TE, TD, and percent members performing data. The corresponding ATI ratings for these tasks were also high. There were, however, many blocks of instruction with no matching tasks, particularly in Volumes VI, IX, and X. These blocks concern the Beyond-The-Horizon (BTH) Receiver, Identification Friend or Foe (IFF) system, and specialized maintenance procedures. Because these areas do not have tasks matched to them, the data alone cannot be used to validate training these blocks. Therefore, training personnel are recommended to review the unmatched objectives to substantiate them for training.

The match of POI E3000BQOQX to the inventory task list showed only 7 of the 40 objectives having tasks matched to them, but most of the unmatched objectives are knowledge-based items which cannot be readily matched to performance tasks. The 7 objectives that were matched were well supported by survey data. These objectives cover control mode operations, radar and IFF operating theory, posting publications, and preflight duties. In light of the support provided by OSR data, no changes are recommended for these POIs.

Upon further review of the task data, approximately 109 of the 319 inventory task statements having more than 30 percent members performing tasks and above-average or high TE ratings, were not referenced to either the resident course or Tinker POIs. Some examples of these tasks are:

- Analyze surveillance radar automatic test results
- Analyze surveillance radar manual test results
- Fault isolate data communications using BIT/FIT
- Remove or replace circuit card assemblies within RDC

- Advise maintenance personnel of aircraft systems malfunctions using phone patch
- Recycle radar programs
- Operate fire extinguishers
- Remove or replace circuit card assemblies within RCMP

A comprehensive list of those tasks not referenced to either POI is provided in Table 15. The combination of high TE, percent members performing, and corresponding ATI ratings, suggest that these tasks should be considered for inclusion in training. Therefore, a review of these unreferenced tasks is warranted, to determine the feasibility of training them formally in the Airborne Radar Technician course at Tinker AFB, or the tech school at Keesler AFB.

JOB SATISFACTION ANALYSIS

An important part of the OSR process involves the analysis of job satisfaction data. These data can be used by career ladder managers to gain a better understanding of those factors affecting job performance of 118X2 personnel. These factors include expressed job interest, utilization of talents and training, and reenlistment intentions. This survey compared job satisfaction indicators on three levels. Table 16 displays job satisfaction indicators for AFSC 118X2 TAFMS groups and a comparative sample of an aircrew career ladder surveyed in 1988. Data on TAFMS groups for the 1984 survey of AFSC 328X2 were not available for comparison with current 118X2 TAFMS groups. But TICF groups from both surveys were available for comparison, and are shown in Table 17. Finally, Table 18 displays job satisfaction data for the survey specialty jobs.

These tables reflect high job satisfaction overall within the 118X2 career ladder. However, Table 16 does show a trend toward decreasing satisfaction as members become more experienced. When matched against a comparative sample of AFSC 118X1 career ladder personnel surveyed in 1988, the 118X2 personnel universally had higher satisfaction indicators, except for the 'sense of accomplishment' indicators which were relatively the same. For the 118X2 first-enlistment group, slightly low reenlistment intention figures may indicate some dissatisfaction within that group. Approximately 38 percent of the first-enlistment members indicated they would probably not reenlist. A similar comparison of satisfaction data with TICF groups from the 1984 survey, reflected slightly lower satisfaction for the 118X2 TICF groups, but not substantially lower (see Table 17). Overall trends were good, with the exception of the reenlistment intentions for the 1-48 month TICF groups from both surveys (see Table 17). It appears that those factors affecting the reenlistment rate have continued to adversely effect the career ladder since 1984. Generally, the current 118X2 job satisfaction data reflect somewhat less satisfaction today as compared to 1984.

TABLE 15

TASKS NOT REFERENCED TO EITHER POI E3AGR11832 OR POI E3000BQOQX WITH
GREATER THAN 30% MEMBERS PERFORMING

TASK	TE**	ATI	PCT 1ST ENL	TSK DIF**
<u>MAINTAIN COMPARTMENT EQUIPMENT</u>				
G169 ANALYZE SURVEILLANCE RADAR MANUAL TEST RESULTS	6.43	18	100	5.80
G168 ANALYZE SURVEILLANCE RADAR AUTOMATIC TEST RESULTS	6.31	18	100	5.88
G171 FAULT ISOLATE DATA COMMUNICATIONS USING BIT/FIT	6.26	18	96	6.04
G215 REMOVE OR REPLACE CIRCUIT CARD ASSEMBLIES WITHIN RDC	5.94	18	96	6.00
G209 RECYCLE RADAR PROGRAMS	5.69	18	100	4.23
G206 RECONFIGURE POWER SUPPLIES IN DIGITAL CABINETS	5.26	17	92	4.98
G205 RECONFIGURE POWER SUPPLIES IN ANALOG CABINETS	5.20	17	88	5.07
G208 RECYCLE POWER ON DIGITAL RACKS	5.20	17	100	3.85
G213 REMOVE OR REPLACE CIRCUIT CARD ASSEMBLIES WITHIN RADAR TRANSMITTER SYSTEMS	5.14	17	75	5.97
G195 OVERRIDE SYSTEM TIME-OUT CLOCKS	5.06	17	100	4.27
G210 REMOVE OR REPLACE CIRCUIT CARD ASSEMBLIES WITHIN ANALOG CABINETS	5.06	17	88	5.76
G211 REMOVE OR REPLACE CIRCUIT CARD ASSEMBLIES WITHIN DDP	5.03	17	75	5.64
G214 REMOVE OR REPLACE CIRCUIT CARD ASSEMBLIES WITHIN RCMP	5.00	17	67	5.86
G207 RECONFIGURE POWER SUPPLIES IN MSC CABINETS	4.77	17	71	4.87
G212 REMOVE OR REPLACE CIRCUIT CARD ASSEMBLIES WITHIN MSC CABINETS	4.71	17	63	5.60
<u>MAINTAIN IFF EQUIPMENT</u>				
H231 REMOVE OR REPLACE CIRCUIT CARD ASSEMBLIES WITHIN RADAR TARGET DATA PROCESSORS (RTDP)	6.09	18	100	5.38
H228 PERFORM TROUBLE ANALYSIS USING OBT&M FALSE ALARMS	5.71	18	96	5.19
H225 PERFORM IFF TURN-ON AND TURN-OFF PROCEDURES	5.63	17	100	4.18
H224 PERFORM IFF OPERATIONAL CHECKOUT PROCEDURES	5.60	17	88	4.74
H227 PERFORM TROUBLE ANALYSIS BY VISUALLY DETECTING FAULTS	5.49	17	92	5.47
H222 MONITOR IFF STATUS INDICATOR LIGHTS	5.40	17	96	4.21
H223 PERFORM IFF EQUIPMENT COOLING LOSS ACTIONS	5.40	17	75	4.76

* Training Emphasis (TE) has an average of 3.54 and
a Standard Deviation of 2.13 (High TE = 5.67)

** Task Difficulty (TD) has an average of 5.0 and
a Standard Deviation of 1.0

TABLE 15 (CONTINUED)

TASKS NOT REFERENCED TO EITHER POI E3AQR11832 OR POI E3000BQQQX WITH
GREATER THAN 30% MEMBERS PERFORMING

<u>TASK</u>				
<u>TE*</u>	<u>ATI</u>	<u>PCT</u>	<u>TSK</u>	<u>DIF**</u>
		<u>1ST</u>		
		<u>ENL</u>		
<u>PREFLIGHT AND POSTFLIGHT</u>				
F148	PERFORM ETHYLENE, GLYCOL, AND WATER (EGW) QUANTITY CHECK PROCEDURES	17	100	4.42
F156	REVIEW FLIGHT CREW INFORMATION FILES (FCIF)	17	96	3.06
F157	REVIEW MISSION OPERATIONS READ FILES (MORF)	17	96	3.20
<u>PERFORM IN-FLIGHT CREW DUTIES</u>				
I276	OPERATE FIRE EXTINGUISHERS	18	71	4.00
I237	COMPLETE AND MAINTAIN AIRBORNE RADAR TECHNICIAN (ART) IN-FLIGHT LOG FORMS	18	100	4.68
I274	OPERATE EMERGENCY ESCAPE HATCHES	18	83	3.95
I255	COORDINATE SURVEILLANCE RADAR CONTROL WITH ASO	18	100	4.47
I256	COORDINATE SURVEILLANCE RADAR EQUIPMENT MALFUNCTIONS OR REPAIRS WITH MCC AND ASO	18	100	5.01
I273	OPERATE EMERGENCY ESCAPE DOORS	18	92	3.79
I233	ADVISE MAINTENANCE PERSONNEL OF AIRCRAFT SYSTEMS MALFUNCTIONS USING PHONE PATCH	18	100	6.08

* Training Emphasis (TE) has an average of 3.54 and
a Standard Deviation of 2.13 (High TE = 5.67)

** Task Difficulty (TD) has an average of 5.0 and
a Standard Deviation of 1.0

TABLE 16

COMPARISON OF JOB SATISFACTION INDICATORS FOR 118X2 AND COMPARATIVE
SAMPLE GROUP
(PERCENT MEMBERS RESPONDING)**

	<u>1-48 MONTHS TAFMS</u>		<u>49-96 MONTHS TAFMS</u>		<u>97+ MONTHS TAFMS</u>	
	1989 (N=24)	COMP SAMPLE** (N=14)	1989 (N=26)	COMP SAMPLE** (N=27)	1989 (N=48)	COMP SAMPLE** (N=58)
<u>EXPRESSED JOB INTEREST:</u>						
INTERESTING	88	86	85	81	81	76
SO-SG	8	7	8	11	16	14
DULL	4	7	4	7	4	10
<u>PERCEIVED UTILIZATION OF TALENTS:</u>						
FAIRLY WELL TO PERFECTLY LITTLE OR NOT AT ALL	88 12	71 29	77 19	78 22	85 15	76 24
<u>PERCEIVED UTILIZATION OF TRAINING:</u>						
FAIRLY WELL TO PERFECTLY LITTLE OR NOT AT ALL	100 0	93 7	96 0	89 11	92 8	79 21
<u>SENSE OF ACCOMPLISHMENT:</u>						
SATISFIED	75	79	73	78	69	64
NEUTRAL	21	14	12	0	8	7
DISSATISFIED	4	7	8	22	23	29
<u>REENLISTMENT INTENTIONS:</u>						
YES, OR PROBABLY YES	58	93	65	78	81	81
NO, OR PROBABLY NO	38	7	35	22	10	5
PLAN TO RETIRE	4	0	0	0	6	14

* Columns may not add to 100 percent due to rounding or lack of response

** Comparative sample of Aircrew career ladder AFSC 118X1 personnel surveyed in 1988

TABLE 17

COMPARISON OF JOB SATISFACTION INDICATORS FOR CURRENT AFSC 118X2 SURVEY
AND PREVIOUS 1984 SURVEY OF AFSC 328X2
ACROSS TICF GROUPS
(PERCENT MEMBERS RESPONDING)*

	1-48 MONTHS TICF		49-96 MONTHS TICF		97+ MONTHS TICF	
	AFSC 118X2 (N=38)	AFSC 328X2 (N=21)	AFSC 118X2 (N=34)	AFSC 328X2 (N=17)	AFSC 118X2 (N=26)	AFSC 328X2 (N=5)
<u>EXPRESSED JOB INTEREST:</u>						
INTERESTING	84	100	79	94	88	100
SO-SO	11	0	12	0	12	0
DULL	5	0	6	6	0	0
<u>PERCEIVED UTILIZATION OF TALENTS:</u>						
FAIRLY WELL TO PERFECTLY	84	100	82	82	85	100
LITTLE OR NOT AT ALL	16	0	15	18	15	0
<u>PERCEIVED UTILIZATION OF TRAINING:</u>						
FAIRLY WELL TO PERFECTLY	84	100	91	94	92	100
LITTLE OR NOT AT ALL	8	0	6	6	8	0
<u>REENLISTMENT INTENTIONS:</u>						
YES, OR PROBABLY YES	55	57	79	71	85	40
NO, OR PROBABLY NO	39	38	21	6	4	0
PLAN TO RETIRE	3	0	0	18	8	60

* Columns may not add to 100 percent due to rounding or lack of response

TABLE 18

JOB SATISFACTION DATA FOR CLUSTER AND JOB TYPES
(PERCENT MEMBERS RESPONDING)*

	JOB TYPES			
	AIRBORNE RADAR SYSTEMS CLUSTER PERSONNEL	AIRBORNE RADAR TECHNICIAN (ART) PERSONNEL	ART INSTRUCTORS	ART STANDARDIZATION/ EVALUATION PERSONNEL
<u>EXPRESSED JOB INTEREST:</u>				
INTERESTING	84	81	89	83
SO-SO	11	13	7	17
DULL	4	6	4	0
<u>PERCEIVED UTILIZATION OF TALENTS:</u>				
FAIRLY WELL TO PERFECTLY	84	79	93	83
LITTLE OR NOT AT ALL	16	21	7	17
<u>PERCEIVED UTILIZATION OF TRAINING:</u>				
FAIRLY WELL TO PERFECTLY	95	100	100	93
LITTLE OR NOT AT ALL	5	0	0	7
<u>REENLISTMENT INTENTIONS:</u>				
YES, OR PROBABLY YES	71	67	75	83
NO, OR PROBABLY NO	23	36	14	0
PLAN TO RETIRE	3	0	4	17

* Columns may not add up to 100 percent due to rounding or a lack of response

Job satisfaction data presented in Table 18 for the survey specialty jobs, reflect high satisfaction across all jobs. It should be noted, however, that 36 percent of the Airborne Radar Technician (ART) Personnel group members have indicated they do not intend to reenlist. This figure corresponds to the somewhat negative reenlistment figure shown for the 1-48 month TAFMS group in Table 6. Except for the reenlistment indicators for the less experienced personnel, the AFSC 118X2 career ladder members appear to be highly satisfied with their jobs.

IMPLICATIONS

There have not been any significant changes in task performance for AFSC 118X2 career ladder members since their separation from the 328X2 career ladder in October of 1984. Airborne Radar Systems personnel still perform a mostly technical job, thus limiting job progression through the 7-skill level, where 70 percent of that group's time on the job involves performing the same tasks performed at the lower skill levels. The AFR 39-1 Specialty Descriptions are well supported by survey data, but the addition of those activities involving "coordination" among the aircrew members is recommended for both specialty descriptions. Job satisfaction for the career ladder is high, though reenlistment intentions for the first-enlistment members warrant some investigation.

Analyses of both the AFSC 118X2 STS and POI documents for course E3AQR11832 000 and course E3000BQOQX reflect very good data support. However, some STS 3-skill level proficiency codes are recommended for revision, and tasks not referenced to these three training documents should be reviewed for possible inclusion in future revisions of the training program.

APPENDIX A
SELECTED REPRESENTATIVE TASKS PERFORMED BY
CAREER LADDER STRUCTURE GROUPS

TABLE A1

REPRESENTATIVE TASKS PERFORMED BY
AIRBORNE RADAR SYSTEMS CLUSTER PERSONNEL
(ST0001)

GROUP SIZE: 98
PREDOMINATE PAYGRADES: E4-E5
PERCENT OF SAMPLE: 100%

AVERAGE TICF: 70 MONTHS
AVERAGE TAFMS: 106 MONTHS
AVERAGE # TASKS PERFORMED: 190

TASKS	PERCENT MEMBERS PERFORMING
G191 MONITOR LOCATIONS DISPLAYED ON RCMP	100
I237 COMPLETE AND MAINTAIN AIRBORNE RADAR TECHNICIAN (ART) IN-FLIGHT LOG FORMS	100
G190 MONITOR LIQUID COOLING SYSTEM (LCS) METERS AND GAUGES	100
G200 PERFORM RADAR TURN-ON PROCEDURES	100
G187 MANUALLY CONTROL SURVEILLANCE RADAR CONFIGURATIONS USING KEYBOARD ACTION	100
G199 PERFORM RADAR TURN-OFF UNDER RCMP CONTROL	100
H225 PERFORM TURN-ON AND TURN-OFF PROCEDURES	100
G192 MONITOR SURVEILLANCE RADAR AUTOMATIC RECONFIGURATIONS	99
F152 PERFORM PREFLIGHT INSPECTIONS OF PERSONAL EQUIPMENT	99
F150 PERFORM PREFLIGHT INSPECTIONS OF IFF UNITS	99
F143 PARTICIPATE IN CREW MAINTENANCE DEBRIEFINGS	99
F149 PERFORM PREFLIGHT INSPECTIONS OF EMERGENCY EQUIPMENT	99
G169 ANALYZE SURVEILLANCE RADAR MANUAL TEST RESULTS	98
I262 MAINTAIN FLIGHT PUBLICATIONS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	98
G168 ANALYZE SURVEILLANCE RADAR AUTOMATIC TEST RESULTS	98
G198 PERFORM MANUAL FAULT ANALYSES	98
G182 FAULT ISOLATE TRANSMITTER COMPONENTS USING BIT/FIT	98
F132 BRIEF MISSION CREW COMMANDER (MCC) AND AIR SURVEILLANCE OFFICER (ASO) ON SYSTEM MALFUNCTIONS AND LIMITATIONS	98
F151 PERFORM PREFLIGHT INSPECTIONS OF LCS, POWER FEEDER DUCT COOLING SYSTEM (PFDCS), & ANTENNA COOLING CONTROL PANELS	98
F164 VISUALLY INSPECT LIQUID COOLING SYSTEMS	98
F167 VISUALLY INSPECT SURVEILLANCE RADAR EQUIPMENT IN AFT LOWER LOBES	97
I234 ANALYZE EQUIPMENT FOR BEST MISSION CONFIGURATIONS	97
G180 FAULT ISOLATE SURVEILLANCE RADAR SYSTEMS USING BIT/FIT	97
G185 INTERPRET ON-LINE BIT MESSAGES	97
G177 FAULT ISOLATE RADAR DATA CORRELATOR (RDC) COMPONENTS USING BIT/FIT	97
F131 ASSIST IN LOADING, SECURING, OR UNLOADING CREW GEAR ON AIRCRAFT	96

TABLE A2
REPRESENTATIVE TASKS PERFORMED BY
AIRBORNE RADAR TECHNICIAN (ART) PERSONNEL
(ST0020)

GROUP SIZE: 47
PREDOMINATE PAYGRADES: E4-E5
PERCENT OF SAMPLE: 48%

AVERAGE TICF: 50 MONTHS
AVERAGE TAFMS: 75 MONTHS
AVERAGE # TASKS PERFORMED: 173

TASKS	PERCENT MEMBERS PERFORMING
G191 MONITOR LOCATIONS DISPLAYED ON RCMP	100
G190 MONITOR LIQUID COOLING SYSTEM (LCS) METERS AND GAUGES	100
I237 COMPLETE AND MAINTAIN AIRBORNE RADAR TECHNICIAN (ART) IN-FLIGHT LOG FORMS	100
G200 PERFORM RADAR TURN-ON PROCEDURES	100
G169 ANALYZE SURVEILLANCE RADAR MANUAL TEST RESULTS	100
G192 MONITOR SURVEILLANCE RADAR AUTOMATIC RECONFIGURATIONS	100
G168 ANALYZE SURVEILLANCE RADAR AUTOMATIC TEST RESULTS	100
G199 PERFORM RADAR TURN-OFF UNDER RCMP CONTROL	100
F151 PERFORM PREFLIGHT INSPECTIONS OF LCS, POWER FEEDER DUCT COOLING SYSTEM (PFDCS), & ANTENNA COOLING CONTROL PANELS	100
F152 PERFORM PREFLIGHT INSPECTIONS OF PERSONAL EQUIPMENT	100
G198 PERFORM MANUAL FAULT ANALYSES	100
F150 PERFORM PREFLIGHT INSPECTIONS OF IFF UNITS	100
F161 VISUALLY INSPECT CONDITION OF RADAR EQUIPMENT CABINETS	100
I262 MAINTAIN FLIGHT PUBLICATIONS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	100
F149 PERFORM PREFLIGHT INSPECTIONS OF EMERGENCY EQUIPMENT	100
H225 PERFORM IFF TURN-ON AND TURN-OFF PROCEDURES	100
F143 PARTICIPATE IN CREW MAINTENANCE DEBRIEFINGS	100
I287 SECURE EQUIPMENT FOR DESCENT OR LANDING	100
G187 MANUALLY CONTROL SURVEILLANCE RADAR CONFIGURATIONS USING KEYBOARD ACTION	100
G183 INHIBIT OR ENABLE SURVEILLANCE RADAR AUTOMATIC TESTS	100
G201 PERFORM SURVEILLANCE RADAR CAPABILITY ASSESSMENTS (RCA)	100
G182 FAULT ISOLATE TRANSMITTER COMPONENTS USING BIT/FIT	100
F131 ASSIST IN LOADING, SECURING, OR UNLOADING CREW GEAR ON AIRCRAFT	98
F167 VISUALLY INSPECT SURVEILLANCE RADAR EQUIPMENT IN AFT	98
F164 VISUALLY INSPECT LIQUID COOLING SYSTEMS	98
F166 VISUALLY INSPECT SF-6 SYSTEMS	98
F165 VISUALLY INSPECT PANELS, LOCKS, OR FASTENERS	98

TABLE A3
REPRESENTATIVE TASKS PERFORMED BY
ART INSTRUCTORS
(ST0031)

GROUP SIZE: 28
PREDOMINATE PAYGRADES: E5
PERCENT OF SAMPLE: 29%

AVERAGE TICF: 84 MONTHS
AVERAGE TAFMS: 129 MONTHS
AVERAGE # TASKS PERFORMED: 219

TASKS	PERCENT MEMBERS PERFORMING
G187 MANUALLY CONTROL SURVEILLANCE RADAR CONFIGURATIONS USING KEYBOARD ACTION	100
G191 MONITOR LOCATIONS DISPLAYED ON RCMP	100
G192 MONITOR SURVEILLANCE RADAR AUTOMATIC RECONFIGURATIONS	100
G188 MANUALLY CONTROL SURVEILLANCE RADAR MODES USING KEYBOARD ACTION	100
F152 PERFORM PREFLIGHT INSPECTIONS OF PERSONAL EQUIPMENT	100
D68 CONDUCT IN-FLIGHT TRAINING	100
H228 PERFORM TROUBLE ANALYSIS USING UBTM&M FALSE ALARMS	100
I237 COMPLETE AND MAINTAIN AIRBORNE RADAR TECHNICIAN (ART) IN-FLIGHT LOG FORMS	100
F163 VISUALLY INSPECT FOR IN-FLIGHT MAINTENANCE SPARES AND TECHNICAL ORDERS	100
I234 ANALYZE EQUIPMENT FOR BEST MISSION CONFIGURATIONS	100
F164 VISUALLY INSPECT LIQUID COOLING SYSTEMS	100
G198 PERFORM MANUAL FAULT ANALYSES	100
F165 VISUALLY INSPECT PANELS, LOCKS, OR FASTENERS	100
F166 VISUALLY INSPECT SF-6 SYSTEMS	100
F167 VISUALLY INSPECT SURVEILLANCE RADAR EQUIPMENT IN AFT LOWER LOBES	100
G209 RECYCLE RADAR PROGRAMS	100
F156 REVIEW FLIGHT CREW INFORMATION FILES (FCIF)	100
F157 REVIEW MISSION OPERATIONS READ FILES (MORF)	100
G199 PERFORM RADAR TURN-OFF UNDER RCMP CONTROL	100
F150 PERFORM PREFLIGHT INSPECTIONS OF IFF UNITS	100
G200 PERFORM RADAR TURN-ON PROCEDURES	100
F132 BRIEF MISSION CREW COMMANDER (MCC) AND AIR SURVEILLANCE OFFICER (ASO) ON SYSTEM MALFUNCTIONS AND LIMITATIONS	100
I262 MAINTAIN FLIGHT PUBLICATIONS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	100
F151 PERFORM PREFLIGHT INSPECTIONS OF LCS, POWER FEEDER DUCT COOLING SYSTEM (PFDCS), & ANTENNA COOLING CONTROL PANELS	100
D72 COUNSEL TRAINEES ON TRAINING PROGRESS	96
F131 ASSIST IN LOADING, SECURING, OR UNLOADING CREW GEAR ON AIRCRAFT	93
D91 PROCURE TRAINING AIDS, SPACE, OR EQUIPMENT	86
D85 MAINTAIN TRAINING RECORDS	86
D75 DETERMINE IN-FLIGHT TRAINING REQUIREMENTS	86
D88 PLAN TRAINING	82

TABLE A4

REPRESENTATIVE TASKS PERFORMED BY
ART STANDARDIZATION/EVALUATION PERSONNEL
(ST0009)

GROUP SIZE: 6
PREDOMINATE PAYGRADES: E6
PERCENT OF SAMPLE: 6%

AVERAGE TICF: 111 MONTHS
AVERAGE TAFMS: 141 MONTHS
AVERAGE # TASKS PERFORMED: 232

TASKS	PERCENT MEMBERS PERFORMING
C43 CONDUCT STANDARDIZATION/EVALUATIONS	100
C41 CONDUCT IN-FLIGHT PROFICIENCY EVALUATIONS	100
C50 EVALUATE PERSONNEL FOR COMPLIANCE WITH TECHNICAL ORDERS	100
C42 CONDUCT STANDARDIZATION/EVALUATION CRITIQUES	100
D73 DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION	100
I286 REVIEW TECHNICAL ORDERS FOR IN-FLIGHT PROCEDURES	100
C45 EVALUATE DATA ON MODIFICATION OF EQUIPMENT OR SOFTWARE	100
I262 MAINTAIN FLIGHT PUBLICATIONS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	100
E110 EVALUATE OR IDENTIFY EQUIPMENT OR SOFTWARE PROBLEMS	100
G191 MONITOR LOCATIONS DISPLAYED ON RCMP	100
I237 COMPLETE AND MAINTAIN AIRBORNE RADAR TECHNICIAN (ART) IN-FLIGHT LOG FORMS	100
G168 ANALYZE SURVEILLANCE RADAR AUTOMATIC TEST RESULTS	100
G169 ANALYZE SURVEILLANCE RADAR MANUAL TEST RESULTS	100
G198 PERFORM MANUAL FAULT ANALYSES	100
G209 RECYCLE RADAR PROGRAMS	100
G190 MONITOR LIQUID COOLING SYSTEM (LCS) METERS AND GAUGES	100
B34 INITIATE ACTION TO CORRECT SUBSTANDARD PERFORMANCE OF PERSONNEL	100
G200 PERFORM RADAR TURN-ON PROCEDURES	100
G187 MANUALLY CONTROL SURVEILLANCE RADAR CONFIGURATIONS USING KEYBOARD ACTION	100
E100 COMPLETE RECORDS OF EVALUATION	83
B20 ADJUST DAILY SCHEDULES TO MEET OPERATIONAL COMMITMENTS	83
E118 MAINTAIN CURRENCY REQUIREMENTS, SUCH AS FLIGHT PHYSICAL, LIFE SUPPORT TRAINING, AND ALTITUDE CHAMBER	83
E121 MAINTAIN PUBLICATION LIBRARIES	83
C57 INSPECT PERSONNEL FOR COMPLIANCE WITH MILITARY STANDARDS	83
E128 REVIEW PUBLICATIONS, CORRESPONDENCE, OR REPORTS	83
A15 SCHEDULE PERSONNEL FOR ALERT OR FLIGHT DUTY	83
A5 DEVELOP INSPECTION PROCEDURES	83
E112 INITIATE AF FORMS 847 (RECOMMENDATION FOR CHANGE OF PUBLICATION (FLIGHT PUBLICATIONS))	83